

ABSTRACT OF THE DISCLOSURE

A variable capacitor includes an N⁺ layer including a variable capacitance region, a P⁺ layer epitaxially grown on the N⁺ layer and formed from a SiGe film and a Si film, and a 5 P-type electrode. An NPN-HBT (Hetero-junction Bipolar Transistor) includes a collector diffusion layer formed simultaneously with the N⁺ layer of the variable capacitor, a collector layer, and a Si/SiGe layer epitaxially grown simultaneously with the P⁺ layer of the variable capacitor. 10 Since a depletion layer formed in a PN junction of the variable capacitor can extend entirely across the N⁺ layer, reduction in variation range of the capacitance can be suppressed.